REMARKS

Claims 1-20 are pending in the present application. Claims 5-20 have been added to this application.

A. Rejection under 35 U.S.C. §103 over Asakawa

Claims 1-5 have been rejected under 35 U.S.C. §103 as being unpatentable over Asakawa (US Patent 6,604,804). This rejection under 35 U.S.C. §103 to claims 1-4, and as it may be applied to newly added claims 5-20, is respectfully traversed.

In formulating the rejection under 35 U.S.C. §103, the Examiner alleges that Asakawa discloses receiving input electronic data of an image intended to be printed (Figure 5 of Asakawa); inspecting the data to determine both the lead edge (L.E.) and the trail edge (T.E.) blank borders of the image (column 4, lines 53-55 and column 8, lines 22-29 of Asakawa); and determining whether the blank borders exceed a minimum design distance and adjust imaging and paper delivery timing accordingly to increase subsequent printing speed (column 8, lines 1-29; column 7, lines 38-51; and column 5, lines 20-44 of Asakawa).

However, the Examiner recognizes that Asakawa fails to disclose a determination of whether the blank borders exceed a minimum design distance. To meet this deficiency in the teachings of Asakawa, the Examiner argues, "While [Asakawa] does not explicitly disclose that blank borders exceed a minimum design distance, the calculation of such information is possible."

Based upon these allegations, the Examiner concludes that Asakawa renders the presently claimed invention obvious to one of ordinary skill in the art. These allegations and conclusion are respectfully traversed.

1. Independent claim 1

As set forth above, independent claim 1 recites a method for minimizing the Inter-Document Zone in multi-pass printing system architectures with print engines employing asynchronous paper delivery; and providing control over paper feed and imaging times by receiving input electronic data of an image intended to be printed; inspecting the data to determine both the lead edge and the trail edge blank borders of the image; and on a page by page basis determining whether the blank borders exceed a minimum design

distance and adjust imaging and paper delivery timing accordingly to increase subsequent printing speed.

Initially, the Examiner readily recognizes that Asakawa fails to disclose a determination of whether the blank borders exceed a minimum design distance. To overcome this deficiency in the teachings of Asakawa, the Examiner asserts that the deficiency is moot because such calculations are possible. More specifically, the Examiner holds forth that when a reference is silent to the claimed calculations but the calculations are possible (the realization that these calculations are possible is solely based upon the Applicant's disclosure [hindsight by the Examiner]), one of ordinary skill in the art would be motivated by the knowledge that such calculations are possible to use such calculations in lieu of the calculations taught by the prior art. This position by the Examiner is both arbitrary and capricious.

A determination cannot be declared obvious because the Examiner asserts that the determination is possible. Many determinations are possible, but such the possibility of a determination does not render the determination obvious. Moreover, assuming that possibility is a proper criterion, must the possibility be more likely than not, clear and convincing, 80% possible, 99.99% possible, etc.?

It is clear that the Examiner has failed to establish a prima facie case with respect to obviousness under under 35 U.S.C. §103.

However, assuming *en arguendo*, that the Examiner can rely upon possibilities to establish obviousness, the teachings of Asakawa fail to render the presently claimed invention obvious to one of ordinary skill in the art.

Asakawa teaches, at column 8, lines 1-29, the determination of the remainder data (R) based upon the gap (G) between two documents, the partial data left in the swath buffer (Pd), and the swath height (S) of the printer head. The determined remainder data (R) provides information to the printing system with respect to how much of the lower portion of a printer head can be utilized to print the next page. Asakawa teaches that the determination of remainder data (R) enables the more efficient printing results.

The teachings of Asakawa are not concern with inter-document zone management. Moreover, Asakawa fails to disclose or suggest determining the size of the blank borders of a page because Asakawa is not concern with inter-document zone

management, but minimizing the number of swaths a printer head takes to print multi-pages.

Therefore, contrary to the Examiner's assertion, Asakawa fails to disclose or suggest inspecting the data to determine both the lead edge and the trail edge blank borders of the image, as set forth by independent claim 1.

2. Independent claim 5

As set forth above, independent claim 5 recites a method for managing a size of an inter-document zone in a printing system having an imaging subsystem and a recording medium transport subsystem, the printing system executing transition events, by identifying a leading edge non-image zone of an electronic image to be rendered, the electronic image to be rendered having a plurality of scanlines, each scanline containing a plurality of pixels of image data, the leading edge non-image zone being a portion the electronic image from a first scanline of the electronic image to a scanline of the electronic image immediately preceding a scanline of the electronic image having first renderable image data; determining a length of the leading edge non-image zone, the length being orthogonal to a direction of a scanline of the electronic image; comparing the length of the leading edge non-image zone to a predetermined value; and adjusting a timing of an imaging process executed by the imaging subsystem when the length of the leading edge non-image zone exceeds the predetermined value.

As stated above, Asakawa teaches, at column 8, lines 1-29, the determination of the remainder data (R) based upon the gap (G) between two documents, the partial data left in the swath buffer (Pd), and the swath height (S) of the printer head. The determined remainder data (R) provides information to the printing system with respect to how much of the lower portion of a printer head can be utilized to print the next page. Asakawa teaches that the determination of remainder data (R) enables the more efficient printing results.

The teachings of Asakawa are not concern with inter-document zone management. Moreover, Asakawa fails to disclose or suggest determining a length of the leading edge non-image zone, the length being orthogonal to a direction of a scanline of the electronic image; comparing the length of the leading edge non-image zone to a predetermined value; and adjusting a timing of an imaging process executed

by the imaging subsystem when the length of the leading edge non-image zone exceeds the predetermined value because Asakawa is not concern with inter-document zone management, but minimizing the number of swaths a printer head takes to print multi-pages.

Therefore, Asakawa fails to disclose or suggest, as set forth by independent claim 5:

(a) determining a length of the leading edge non-image zone, the length being orthogonal to a direction of a scanline of the electronic image;

(b) comparing the length of the leading edge non-image zone to a predetermined value; and/or

(c) adjusting a timing of an imaging process executed by the imaging subsystem when the length of the leading edge non-image zone exceeds the predetermined value inspecting the data to determine both the lead edge and the trail edge blank borders of the image.

3. Independent claim 15

As set forth above, independent claim 15 recites a method for managing a size of an inter-document zone in a printing system having an imaging subsystem and a recording medium transport subsystem, by identifying a leading edge non-image zone of an electronic image to be rendered, the electronic image to be rendered having a plurality of scanlines, each scanline containing a plurality of pixels of image data, the leading edge non-image zone being a portion the electronic image from a first scanline of the electronic image to a scanline of the electronic image immediately preceding a scanline of the electronic image having first renderable image data; determining a length of the leading edge non-image zone, the length being orthogonal to a direction of a scanline of the electronic image; comparing the length of the leading edge non-image zone to a predetermined value; and adjusting a timing of a recoding medium delivery process executed by the recording medium transport subsystem when the length of the leading edge non-image zone exceeds the predetermined value.

As stated above, Asakawa teaches, at column 8, lines 1-29, the determination of the remainder data (R) based upon the gap (G) between two documents, the partial data left in the swath buffer (Pd), and the swath height (S) of the printer head. The

determined remainder data (R) provides information to the printing system with respect to how much of the lower portion of a printer head can be utilized to print the next page. Asakawa teaches that the determination of remainder data (R) enables the more efficient printing results.

The teachings of Asakawa are not concern with inter-document zone management. Moreover, Asakawa fails to disclose or suggest determining a length of the leading edge non-image zone, the length being orthogonal to a direction of a scanline of the electronic image; comparing the length of the leading edge non-image zone to a predetermined value; and adjusting a timing of a recoding medium delivery process executed by the recording medium transport subsystem when the length of the leading edge non-image zone exceeds the predetermined value because Asakawa is not concern with inter-document zone management, but minimizing the number of swaths a printer head takes to print multi-pages.

Therefore, Asakawa fails to disclose or suggest, as set forth by independent claim 15:

(a) determining a length of the leading edge non-image zone, the length being orthogonal to a direction of a scanline of the electronic image;

(b) comparing the length of the leading edge non-image zone to a predetermined value; and/or

(c) adjusting a timing of a recoding medium delivery process executed by the recording medium transport subsystem when the length of the leading edge non-image zone exceeds the predetermined value.

4. Dependent claims 2-4, 6-14, and 16-20

With respect to dependent claims 2-4, 6-14, and 16-20, the Applicant, for the sake of brevity, will not address the reasons supporting patentability for these individual dependent claims, as these claims depend directly from allowable independent claims 1, 5, and 15. The Applicant reserves the right to address the patentability of these dependent claims at a later time, should it be necessary.

Accordingly, in view of remarks set forth above, the Examiner is respectfully requested to reconsider and withdraw the rejection under 35 U.S.C. §103.

CONCLUSION

Accordingly, in view of all the reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw the present rejection. Also, an early indication of allowability is earnestly solicited.

Respectfully submitted,

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